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- WATER-RELATION of *Puccinia Asparagi*, see *Puccinia Asparagi*, *Water-Relation*.
- WATTERSON, Ada. The effect of Chemical irritation on the respiration of fungi. Bull. Torr. Bot. Club, 31:291-303. May 1904.
- WHETZEL, H. H. Onion Blight. N. Y. Agr. Exp. Sta. Bull. 218:139-161. April 1904.
- WOOD, rotten, host to *Acanthostigma dispar* Morgan n. sp. Jour. Mycol. 10:162. July 1904.
- ZEa mays, host to *Phyllachora maydis* Maublanc n. sp. Bull. Soc. Myc. France, 30:72. 30 April 1904.
- ZIGNOELLA cubensis Hariot et Pat. n. sp., in thallo *Stypocaulonis scoparii* (Kütz.). Bull. Soc. Myc. France, 20:65. 30 April 1904.

NOTES FROM MYCOLOGICAL LITERATURE. XII.

W. A. KELLERMAN.

THE BRITISH MYCOLOGICAL SOCIETY TRANSACTIONS FOR THE SEASON 1903, pp. 41-67, three colored plates, has the following contents: Report of the Savernake Forest Foray and complete list of Fungi and Mycetoza gathered; Mycology as an instrument of recreation (Rev. W. L. W. Eyre); Occurrence of *Echinostelium minutum* (G. & A.) Lister; Diseases of Plants due to Fungi (Miss A. Lorrain Smith); Notes on Fungi recently collected (Miss A. Lorrain Smith); Two Phalloideae new to Europe (Carleton Rea); Fungi new to Britain.

ROLAND THAXTER'S NOTES ON THE MYXOBACTERIACEAE, Contributions from the Cryptogamic Laboratory of Harvard University, LVI, with plates XXVI and XXVII, is a model piece of literature and record of invaluable work on an interesting group of organisms. Dr. Thaxter vigorously controverts the view of Zederbauer, namely, that the Myxobacteriaceae as an independent order of organisms has no real existence; and that the conditions supposed to have been observed merely represent a symbiotic association between ordinary Eubacteria and hyphomycetous molds. Dr. Thaxter regards this as a novel and somewhat hasty view since the figures and descriptions in that author's paper show as yet a non-acquaintance with any member of the order he discusses. Besides the critical and historical part, the article in the Botanical Gazette contains descriptions of eight new species — amply illustrated.

IN THE 60TH BULLETIN OF THE BUREAU OF PLANT INDUSTRY, U. S. Department of Agriculture, by C. O. Townsend, issued June 30, 1904, the title of which is A soft Rot of the Calla Lily, we learn that the fomenter of the disease is a hitherto undescribed bacterium, namely, *Bacillus aroideae* Townsend n. sp. It was isolated from rotting Calla corms and is the cause of a soft rot of the corm, petiole, and flower stalk of the Calla. It also causes — says the author — a soft, dark colored rot when inoculated into many raw vegetables, such as carrot, potatoe, turnip, radish, cabbage, and cauliflower. It also causes a soft rot of certain green fruits, such as tomatoe, egg plant, and cucumber. There are text figures by way of illustration in addition to nine full page half tone plates.

E. ROSTRUP gives in a 44-page reprint [Videnskabs-Selskabets Skrifter, I, Math.-naturv. kl. 1904, No. 4] the *Norske Ascomycetes*, with localities and hosts. Nearly two dozen new species are described lingua latina.

TO THE MANY SPECIES OF ASPERGILLUS AFFECTING FRUITS, G. Lindau in Hedwigia, Band 43, Heft 5, p. 306-7, adds yet another, namely, *Aspergillus* (*Sterigmatocystis*) *strychni* Lindau n. sp. Die neue Art unterscheidet sich von den bisher bekannten durch die riesenhaften Dimensionen der Konidientraeger und die Sterigmen.

INVESTIGATIONS OF RUSTS BY MARK ALFRED CARLETON, is an interesting Bulletin (No. 63) of the U. S. Department of Agriculture, Bureau of Plant Industry, issued July 12, 1904. Notes are given on life histories of Euphorbia Rust, Sunflower Rust, Crown Rust of Oats, supplementing and corroborating previous published reports; also experiments with *Puccinia xanthii* Schw. and *P. heterospora*. The other topics are Segregation of host plants, Winter resistance of *Uredo* (of *P. poarum* Niels. and *P. montanensis* Ell.), Emergency adaptations (*P. vexans* Farl.), and Perennial species (*Aecidium tuberculatum* E. & K., and the rust on *Peucedanum foeniculatum*). Colored plates are given of *Aecidium tuberculatum* and of the Euphorbia Rust and *Puccinia vexans*.

THE EFFECT OF CHEMICAL IRRITATION ON THE RESPIRATION has been experimentally investigated by Ada Watterson, whose report is found in the Bulletin of the Torrey Botanical Club for May 1904, pp. 291-303. She outlines the work of previous investigators and summarizes the results quoted: we find that small quantities of certain poisonous substances act as stimulants, increasing the growth of certain plants; they also increase respiration, but what relation the latter increase bears to the former is not determined. In case of fungi stimulation

allows the plant to make use of the sugar to form a greater amount of dry substance in a given time; hence the important question of the amount of CO_2 which is produced at the same time—the objective point of the work here reported.

THE ARTICLES IN THE BULLETIN DE LA SOCIÉTÉ MYCOLOGIQUE DE FRANCE, XX 2e fascicule are as follows: N. Patouillard, Champignons algero-tunisiens; M. Molliard, Forme conidienne du *Daldinia concentrica*; Hariot et Patouillard, Champignons nouveaux de l'Herbier du Museum; A. Vast, A propos de la culture d'*Oospora destructor*; Maublanc, Espèces nouvelles de champignons inférieurs; E. Boulanger, La culture artificielle de la truffe.

JAMES VANHOOK IN CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION BULLETIN 219, gives an account, with numerous illustrations, of some of the diseases of Ginseng. The "Wilt" is caused by *Acrostalagmus albus* Pr., and Damping off by *Rhizoctonia*. Other diseases are discussed, as Nematode Root Gall, Black Rot, Soft Rot, and *Alternaria* or Leaf-spot.

A BRIEF POPULAR ACCOUNT OF THE BLACK FUNGI, PYRENO-MYCETES, is given by C. L. Shear in the July No. of the Plant World, pp. 172-4. Of the ten thousand or more species which have been described, the complete life history of perhaps less than one hundred is known, and so the author states that those who are looking for a fertile field for research can here find problems in abundance, either biologic or taxonomic.

THE REPORT OF THE BOTANICAL DEPARTMENT OF THE NEW JERSEY AGRICULTURAL COLLEGE EXPERIMENT STATION FOR 1903, by Byron D. Halsted and James A. Kelsey contained seven mycological items—the most extensive being that pertaining to the Powdery Mildews, pp. 517-536, illustrated by two plates. The treatment is popular and concludes with a preliminary list of the species (22) of powdery mildews of cultivated plants, with the leading hosts under each.

ONION BLIGHT (*PERONOSPORA SCHLEIDENIANA*) by H. H. Whetzel is Bulletin No. 218, Cornell University Agricultural Experiment Station, and treats in extenso a serious outbreak of Onion Blight in 1903—the first part being a popular account of the disease with remedies; part second is a more technical account of the Onion Blight and other diseases, illustrated by several text figures.

A REMARKABLE LICHEN was described by Briosi et Farneti in Atti del Ist. bot. dell Università di Pavia, VIII, 1902, under the title *Intorno ad un nuovo tipo di Licheni a talla conidifera che vivono sulla Vite, finora ritenuti per Funghi*. The plant,

heretofore grouped with fungi, produces conidia as well as ascospores. The conidiophores are branches, each extremity bearing 2-4 conidia; these are fusiform slightly curved, hyaline, 3-5-septate and $50 \times 4\mu$. Hence the plant was called by Corda a *Fusarium* (*F. biasolettianum*); it was placed by Fries in the genus *Pionnotes* (type, *Fusarium capitatum* Schw.), and in the *Sylloge* included in the *Tuberculariaceae*. The authors create a new genus of Lichens, namely, *Chrysogluten*, which includes two of four recorded species of *Pionnotes*, namely, *C. biasolettianum* (Corda) and *C. casatii* (Thüm.) — placed in a new family, *Chrysoglutenaceae*.

BACTERIA, YEASTS AND MOLDS IN THE HOME, by H. W. Conn has been recently published (1903) by Ginn & Company of Boston. This is a useful book of 293 pages suitable for general readers and for classes in educational institutions. Bacteria are treated on pages 100-125.

THE AECIDIUM OF MAIZE RUST, J. C. Arthur, *Botanical Gazette*, July 1904 (pp. 64-7), is an interesting account of a clue to the connection of *Aecidium* on *Oxalis* with *Puccinia sorghi* Schw., and the culture experiments verifying the same. It is remarkable that the *Aecidium oxalidis* Thüm. should have been so rarely collected since the Maize Rust is both common and often abundant. Can it be that this stage in the life cycle is generally suppressed?

AN EXTENDED AND ILLUSTRATED ACCOUNT OF THE WATER-RELATION OF PUCCINIA ASPARAGI, is given by Ralph E. Stone in the July No. of the *Botanical Gazette*, 1904, (pp. 19-43), as "a contribution to the Biology of a parasitic fungus." The study was made in California; it is shown that dew is of absolute necessity in infection by the rust and of more importance than the rain; without such moisture no infection can take place. Dry atmosphere checks aecidial development; uredo development is similarly checked, and changes to a production of teleutospores. An abundance of soil moisture during the summer has a marked effect in retarding the development of this fungus by giving the host greater vitality and resistance.

BRUCE FINK gives Further Notes on *Cladonias*, III, *Cl. furcata* and *Cl. crispata*, in the July No. of the *Bryologist*. Many varieties are enumerated in the light of Wainio. *Cladonia furcata* and five varieties, also one variety of *Cl. crispata*, are figured. Professor Fink says "regarding the illustrations, we are fortunate enough this time to be able to give them all from material that has been examined by Dr. Wainio."

UNDER THE TITLE OF MYCOLOGICAL NOTES in the *Journal of Botany*, p. 182, Ernest S. Salmon gives an account of the

formation of ascospores in *Erysiphe graminis*. He developed the fact of some interest that *E. graminis* is able, under favorable circumstances, to produce, as soon as the perithecium is formed, ascospores which are capable of at once infecting the host plant.

ERNEST S. SALMON'S PAPER ON SPECIALIZATION OF PARASITISM IN THE ERYSIPTACEAE, II, is printed in the *New Phytologist*, 3:109-121, May 1904. It gives the results of further inoculation experiments, carried out the preceding summer, in which conidia were used of the following species, *Erysiphe graminis* DC. on four hosts; *Sphaerotheca humuli* (DC.) Burr. on one host; *S. humuli fuliginea* (Schl.) Salm. on two hosts; *E. cichoriacearum* DC. on one host and *E. galeopsidis* DC. on one host. The results obtained seemed to show that in every case the form of the fungus used has become specialized into a "biologic form."

THE REPORT OF THE STATE BOTANIST 1903, NEW YORK MUSEUM, by Charles H. Peck, forms Bulletin 75 (Botany 7), 1904. This is a pamphlet of 84 pages and four double page colored plates. The mycological part consists of descriptions of thirteen new species of the higher fungi, also two new varieties besides others listed as new to the State; under the head of Edible Fungi seven mushrooms are fully and popularly described and illustrated. This Bulletin can be obtained from the Director of the Museum (Albany, N. Y.) for 40 cents.

THE INTRODUCTORY PART OF THE ARTICLE BY ERNEST S. SALMON, On *Erysiphe Graminis* DC. and its adaptive parasitism within the genus *Bromus*, *Annales Mycologici*, 2:255-266, Mai 1904, presents general considerations on the subject of the interrelations of 'biologic forms' and host-species. He says: Now the facts show not only the high degree of specialization reached by the fungus in its adaptive parasitism to the various species of *Bromus*; but also that *each species of Bromus possesses distinctive physiological (constitutional) characters existing concomitantly with the specific morphological characters*. These physiological characters are constant, and render the species susceptible or immune in a definite manner, so that the various species of *Bromus* according to their constitution — if one may use the term — behave differently to the attack of the 'biologic forms' of the fungus.

THE JANUARY NO. OF THE JOURNAL OF MYCOLOGY (1904) gave the following: Morgan — A New Sirothecium; Hedgcock — Proof of the Identity of *Phoma* and *Phyllosticta* on the Sugar Beet; Atkinson — Notes on the Genus *Harpochytrium*; Arthur — Cultures of Uredineae in 1903; Kellerman — Notes from Mycological Literature, VIII; Index to Uredineous Infection Experiments; American Mycological Society.